

**Separate Brief Note**

***Cybrary* support for learning, teaching and research at The  
University of Queensland - the 1998 University of the Year**

by

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*Addresses topic area*

**3. The Learner-Centered Environment**



GOOD UNIVERSITIES GUIDES

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***Cybrary* support for learning, teaching and research at The  
University of Queensland - the 1998 University of the Year**

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**The Learner-Centered Environment**

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# **CYBRARY SUPPORT FOR LEARNING, TEACHING AND RESEARCH AT THE UNIVERSITY OF QUEENSLAND - THE 1998 UNIVERSITY OF THE YEAR**

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## **Abstract**

The Library has taken a leadership role in addressing the real needs of students in the 21<sup>st</sup> Century. It is working collaboratively with students and staff to meet their learning and teaching needs as new technological and service possibilities become available. The Library has integrated new web developments with traditional services to create Australia's first **Cybrary** – a “virtual library” in a “wired university”.

The **Cybrary** is an indispensable, integrated approach to meet the information demands of lifelong learning and problem based teaching. It is a powerful support for flexible learning and an enhancement to flexible teaching.

The University of Queensland Library has traditionally been an early adopter of technology. In the early 1970s online databases were searched for clients; then an electronic catalogue was introduced. When CD-ROM technology opened up the world of enduser access to electronic bibliographic databases the Library was among the first to provide its clients with these products. As a proactive electronic service provider, the Library has adopted and utilized Internet and Web technology as a vehicle to provide better service to its clients. As a result of its prompt and innovative adoption of leading edge technologies the Library has developed the **Cybrary**.

The services offered through the **Cybrary** support the complex and varied learning journeys that both students and staff undertake in the current educational environment. Students and staff are able to control their own research and learning to a degree not known before.

Last year the Library was recognised for its innovative **Cybrary** services when it jointly won the highly regarded Institutional Award for Services to Australian Students in the Australian Awards for University Teaching. The paper describes the **Cybrary's** components and the challenges faced in its implementation.

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## **1. The Learning Journey**

Students and staff at the University of Queensland are using the University of Queensland **Cybrary** to interact with the world of knowledge to improve their learning, teaching and research experiences. The **Cybrary** is an innovative, integrated web-based way to navigate to sources of information. It is supported by a comprehensive information skills training programme and significant investment in information technology infrastructure.

Students begin their journey with a single integrated web interface to all library collections and services, including library opening hours, staff contacts, branch library layouts and details of facilities and training programmes. From here, they can connect to the local catalogue of holdings of books, journals, videos and other resources. Students are able to view their own borrowing records and renew their loans.

To gain further knowledge from the journal literature, students can continue their voyage of discovery by searching over 230 locally held databases indexing thousands of journals in all subject areas. The databases are accessible via a wide range of workstations located on all campuses and from home. These databases are available via dialup 24 hours a day. Students can then find the printed journals on the shelves or use electronic versions which the Library has licensed from various vendors (e.g. *IDEAL: Academic Press journals on-line*, *IAC Searchbank*, *Springerlink*). The **Cybrary** provides access to over 2,000 electronic journals that are listed in the Library's catalogue with direct web links made to them. The **Cybrary** also provides access to millions of information services on the Internet. Some are licensed by the Library for direct use by students. These include databases identifying relevant articles in printed journals which are in some cases linked to the electronic form of the journal itself.

Specialist assistance is available to undergraduates via the **Cybrary**. Students can find sub-sets of information in an electronic reserve collection. They also heavily use electronic versions of examination papers, subject guides (Find-Its), subject and course notes, and reading lists. Hot links are made from all of these to web based resources and easy access to various Internet search engines is provided. Links are also made from the Library's web-server to departmental web-servers where appropriate.

As not all **Cybrary** services are immediately easy to use, the Library assists learning through the provision of specially tailored information skills training programmes. These focus on effective access and use of information. Programmes are provided both in the classroom and interactively via the **Cybrary**. The content of the programmes emphasises effective search strategies and effective use of resources. Many programmes are designed in partnership with teaching staff and relate to specific assignments. The students are then assessed on the quality of information located as part of the assessment in the subject area.

For postgraduates and staff the **Cybrary** provides additional specialised services such as an electronic current awareness service (*Uncover Reveal*) and a web based electronic document requesting and delivery service and tailored training courses.

The following three narratives, one for an undergraduate student, one for a postgraduate and one for a member of the academic staff demonstrate how integral the **Cybrary** is to university learning, teaching and research.

### 1.1. The Undergraduate Journey

- *Peter is a first year undergraduate studying Commerce/Economics. He is at home; it is early evening and Peter has an assignment due in two days. His assignment is “The nature of the working of the international economy and its problems after World War II”.*

Peter logs onto the **Cybrary’s** web page to check the title of a book mentioned in his lecture. Peter finds Lecture Notes on the web page under Course Materials. The Lecture Notes refer to the Reading List for more information. Reading Lists are also listed on the **Cybrary’s** web page under Course Materials and the link for the book is there. The book is listed as available on the shelves and he can pick it up in the morning. He also checks his loans on the library system to make sure there is no overdue material that would block him from borrowing the book tomorrow. There are two books due back today and Peter renews them.

Peter then starts to work on his assignment. He clicks on the **Cybrary’s** link Searching by Subject Area, then on the “**Find It**” (a guide for finding subject information) for Economics. Peter checks which databases to search for information under “*Journals – Current Information on your Topic*”. The databases are all on the **Cybrary’s** Silverplatter Electronic Reference Library (ERL). Peter then logs on to the databases, searches and finds three appropriate articles. The complete text of the articles is available, and he prints them out. There is also an article in the *Australian Financial Review* that he needs. The Web link for the *AFR* is listed on the **Find It**, and he clicks on it and retrieves the article. Assignment preparation done, he logs off, reads the articles and commences the draft of his assignment.

### 1.2 The Postgraduate Journey

- *Juliet is a postgraduate student beginning the second year of her PhD on “Australian foreign policy since 1945: the Asia Pacific region”. She shares a PC in the department’s postgraduate common room. She has recently modified her topic and is checking references for her thesis. She needs two crucial journal articles to show her supervisor.*

Juliet logs on to the **Cybrary’s** web page and clicks the link for the Catalogue. She does a Title search for the two journals she needs. The first one, *The Historical Journal*, is listed in the catalogue. It is available both electronically and in print in the library collection. She clicks on the web link and connects to the web journal site. She reads the abstract and decides to download the full text. This needs *Adobe Acrobat* software, but Juliet doesn’t know what that is. She returns

to the Library's web page and clicks on the Search this Site link, then searches for information about *Adobe Acrobat*. She finds a **FAQ** (Frequently Asked Questions) file "Adobe Acrobat & PDF Files" which explains what to do. She downloads the *Adobe Acrobat* software, and then the article. The second journal is not listed in the catalogue, so Juliet clicks on the Document Delivery link. Juliet had attended a postgraduate information skills training programme and knows she can request items not held. She fills in the form, decides to get it fast-tracked and submits the request.

Juliet continues her search for information for her thesis by clicking on Databases to obtain a subject list of databases to search. Under History, *Current Contents* and the *Humanities Index* are listed and both are available via the Library's *Silverplatter* ERL (Electronic Reference Library). She logs on to them using the *Silverplatter WinSpirs* software loaded on the PC. She searches the databases and finds three relevant articles in *Current Contents*. Juliet then cuts and pastes the journal titles into the Library's web catalogue to see if they are available locally. One, *Explorations in Economic History*, is listed as being available via the Library's subscription to the Internet version of Academic Press's journals, *IDEAL*. She clicks on the links, reads the abstract and decides to retrieve it.

Her supervisor had also mentioned checking for information on the Internet. She checks the Library web page for help with searching the Internet and clicks on the link for Internet. She doesn't know where to start, so she runs through the free self-paced Internet tutorial QUIK-it! She now knows she needs to use a search engine, so she clicks on the link for Search the Internet, then on Search Engines. Juliet reads the library information about the search engine *Hotbot*, and decides to use it to start her search. She clicks on the link for *Hotbot*, and spends the next hour scanning documents on her subject. She then logs off, and begins work on re-drafting Chapter 2 of her thesis.

### 1.3 The Staff Journey

- *Dr Carter is a newly appointed academic with teaching responsibilities in the Department of Anatomy. Dr Carter is in her office and is preparing a lecture for first year undergraduates, and is also in the process of writing an article on "fibroblasts" for the Journal of Biological Chemistry.*

In the next two days Dr Carter is teaching a class of 300 first year anatomy students. The class schedule is very tight and the material has to be available for the students almost immediately. Dr Carter has prepared lecture notes and they have been placed on the department's web page. She e-mails John, her subject liaison librarian, so he can arrange a link to the lecture notes from the **Cybrary's** web page. John arranges this and also loads her reading list onto the Course Materials section of the **Cybrary's** web page. All the readings are linked to the catalogue that indicates whether the material is available or not. Students can access the Course Materials page to check lecture notes, reading lists and exam papers as well as links to other course information maintained by the departments. The **Cybrary** page is the only integrated link for students wanting to find prepared course resources on all subjects offered by the University.

Having provided materials for her students Dr Carter now considers her publication deadline. She is currently working on fibroblasts and wants to check recent material published on this. She logs on to the **Cybrary's** web page and clicks on the link for the Databases. She selects *Current Contents* and *Medline* from the list of databases available via the Library's *Silverplatter* ERL (Electronic Reference Library) and logs on to them using the *Silverplatter WebSpirs*

software. Dr Carter searches the databases and finds a number of very recent and relevant articles in *Current Contents*.

This is distressing for her. Her publication deadline is close and this new material must be assessed to decide its impact on her research. In particular there is one article in the *Journal of Biological Chemistry* that she needs to read in full. There is a link from WebSpirs to the Library's catalogue that immediately indicates the journal is available both in the Library and electronically on the Web. She clicks on the Web link that takes her to the journal's web site. She searches for the article and scans it online then decides to download it. Her research process will continue with further assistance from the **Cybrary**.

## **2. How the Cybrary Began -- The Way of the Web**

The University of Queensland Library is one of the largest academic libraries in Australia and the largest in Queensland. It has consistently been a provider of electronic services to students and staff - automated catalogue and lending services in the early days, then mediated online searching of remote databases, and more recently electronic database indexing services. The Library has steadily increased the databases networked and now has the highest number locally networked of any university library in Australia. It was the first in Australia to install a *Silverplatter* ERL (Electronic Reference Library) server to make information databases available from a single interface.

However, it was the advent of the Web that enabled the Library to radically expand its services. The University of Queensland Library was one of the first to mount a Web version of a library catalogue in Australia. It has continued to add other electronic services as they have become available, for example electronic journals obtained either individually or as part of "umbrella" services from specific vendors and electronic versions of textbooks and multimedia formats. Trials have been carried out on the construction of electronic reserves and the scanning of examination papers, and web pages outlining new library services were constructed as the technology changed. Increasing numbers of classes were held to explain the use of the new services to students and staff who greeted both the classes and the services enthusiastically.

### **2.1 Making the Library's Web into the Cybrary**

During 1997, the Library realised that its web pages needed restructuring. In late 1997 a market research consultant was engaged to conduct focus groups with library users to assist in the development of an ideal approach to redesigning the Library's web site. In consideration of the focus group findings, work began on a new presentation of the Library's web pages and the **Cybrary** (<http://www.cybrary.uq.edu.au/cybrary.html>) was born. Essential items of communication were placed at the first level of the web pages as few students bother to develop an understanding of what is on offer throughout the site. Information categories were made as clear and concise as possible. Statements were designed to be immediately clear to the novice user and details kept as brief as possible. Layout was standardised across all pages. Given the access speed required, non-essential graphics were avoided to reduce the time taken in downloading.

### **2.2 Cybrary Infrastructure**

To develop the **Cybrary**, the Library has invested heavily in information technology hardware and software infrastructure. The Library has:- linked component parts via a local network and the University's wide area network; developed its staffing resources to provide extensive informative

technology expertise at the planning, implementation and support levels; provided Electronic Information Centres in each branch library with sophisticated training facilities, data manipulation software and multimedia support software; allocated significant funds to electronic resources and negotiated appropriate multi-user licenses; and developed standardised interfaces (eg.Z39.50) to external databases. It has developed services with actual facilities students are likely to have in mind. Many web developments use complicated Java script, and other interfaces requiring sophisticated hardware and software to access. The Library has chosen to develop interfaces requiring only widely available hardware and software and new services have been worked up from prototypes. Projects have been undertaken in consultation with user groups where possible to ensure their relevance. Services have been developed with students' time constraints and pressures in mind and are simple and user friendly. Personal assistance is available 81 hours per week.

The information technology infrastructure of the **Cybrary** comprises:

- a leading edge integrated library management system (purchased from Innovative Interfaces Inc.) with a 350 simultaneous user license running on a DEC Alpha computer
- ten file servers using Unix, Novell and Windows NT, with a total of over 200 gigabyte storage for data linked for ease of student access. One fileserver acts as the library webserver. A second supporting the ERL (Electronic Reference Library) databases provides for up to 100 simultaneous users.
- 700 public and staff personal computers, most being high-end Pentium workstations (100mb/sec ethernet network adapters) and some with sound-card, CD-ROM drives.

### 3. Equitable access

The **Cybrary** assists students to access information equitably and progress in higher education. The University Library provides Electronic Information Centres for student use, free of charge, in all branch libraries. Access to the **Cybrary** is available from lecture theatres, tutorial rooms and offices on all campuses. Dial-up use 24 hours per day, 7 days per week, 365 days per year further assures equity. The **Cybrary** is available for students to use at their own pace, in their own place, and in their own time. All services are available to all users.

Information skills training provided by the Library is available without charge to all students and staff. Programmes are provided in classrooms, in the Electronic Information Centres and also interactively via the **Cybrary**. Lifelong learning is an objective of the information skills programme. Classes are voluntary, available to all and provided at a range of times. The sessions are structured to provide a forum in which discussion and question and answer clarify students' understanding. There is a general belief that attendance by students at information skills programmes leads to effective use of the **Cybrary** and that effective use of the **Cybrary** ensures better performance by students. Postgraduates attending classes have rated their own improvement as significant. Academic staff working with library staff consistently report students who use the **Cybrary's** services effectively perform better than those who do not.

### 4. Promotion of the *Cybrary* and Student Satisfaction

The service is promoted directly to students via a range of mechanisms including departmental liaison librarians, noticeboards, e-mail discussion lists, notices and flyers, links to and from various Home Pages within the University and outside, and information skills and student orientation programmes. The Library values student input highly and it is sought via surveys,



suggestion boxes (physical and electronic) and informally in structured focus groups. It was focus group discussions in late 1997 that led to the redesign of the Library web pages and the creation of the **Cybrary**.

Student satisfaction is central to the activities of the Library and their response to **Cybrary** services has been extremely positive with very high use indicating extensive adoption of services. In 1996, there were approximately 250,000 logins per month to the catalogue. In 1997, this figure had increased by almost 100% to 473,000 logins per month. By 1998 further dramatic growth had occurred with another 100% increase to almost 1,000,000 logins per month. The database component of the **Cybrary** has experienced similar heavy use and growth. In 1996, there were approximately 85,000 logins per month and in 1997 a 50% increase resulted in figures of 123,500 logins per month. In 1998 the increase has been about 60% with approximately 200,000 logins per month. Compared with other university libraries in Australia, the statistics supplied by the various services show that the University of Queensland Library is consistently the highest user of all databases for which consortium purchasing agreements have been arranged.

The University of Queensland Library's web site has also proved to be the most heavily used site at the University of Queensland. The new version of the University's Home Page has a direct link to the Library on all pages that are part of the site, providing further evidence of the significance of the University of Queensland **Cybrary**.

Where both **Cybrary** and traditional services are available students are choosing the flexibility of the former. The e-mail discussion list set up by the Library to provide information on the availability of new services is well subscribed and high attendance at voluntary information skills training sessions evidence a thirst for knowledge amongst the student community. Further positive response is evidenced in the number of students attending training programmes on the use of various information services. Over 24,000 people attended library information skills programmes in 1998. As well, over 800 students and staff attended specialised Internet, Endnote and Research Skills training programmes. The ten-hour programme *Information Skills for Researchers and Postgraduates* has proven extremely popular and was provided 44 times to a total of almost 500 postgraduate students and researchers.

## 5. Conclusion

The University of Queensland Library is bringing 21<sup>st</sup> century learning support services to its students and staff through the University of Queensland **Cybrary**. It is an innovative, ongoing project - the first of its kind in Australia. With its reputation for imaginative use of information technology the University of Queensland Library is integrating its state of the art Information Technology support services with traditional services to create a "virtual library" in a "wired university". The **Cybrary** pushes out the boundaries of information gathering and gives students new scope for synthesising and processing the material they discover. It meets the information demands of lifelong learning and problem based teaching and is a powerful support for flexible learning and enhancement to flexible teaching.